

CLAIMS

What is claimed is:

- 5 1. A process for preparing the contacts on microswitches, said process reducing the resistance of said microswitches and maintaining the low resistance of said microswitches for many cycles, comprising
 - 10 a. obtaining microswitches and
 - b. exposing said contacts from said microswitches to a fluid for preparing said microswitches.
- 15 2. The process of claim 1 wherein said microswitch is a microrelay.
3. The process of claim 1 wherein the materials used to make said contacts are selected from the group consisting of gold, ruthenium, rhodium and combinations thereof.
- 20 4. The process of claim 3 wherein said material is ruthenium.
5. The process of claim 1 wherein said microswitch is fabricated using the process outlined in Figure 3.
- 25 6. The process of claim 1 wherein said fluid for preparing said microswitch comprises materials selected from the group consisting of acids, bases, peroxides and mixtures thereof.

7. The process of claim 6 wherein said materials are diluted with water.

5 8. The process of claim 6 wherein said materials are selected from the group consisting of sulfuric acid, hydrochloric acid, ammonium hydroxide, hydrogen peroxide, and mixtures thereof, said materials being optionally diluted with water.

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9. The process of claim 6 wherein said contacts are exposed to said materials for approximately 5 - 30 minutes.

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10. The process of claim 9 wherein said exposure is for approximately 20 minutes.

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11. The process of claim 9 wherein said preparation additionally includes a step of releasing said die from a mold by use of a process comprising (1) exposing said die and mold to concentrated, semiconductor grade hydrogen peroxide for approximately 5-20 minutes), (2) rinsing said die with deionized water for approximately 5-20 minutes, (3) exposing said die to a 25% solution of concentrated, semiconductor grade nitric acid, 75 %
25 deionized water (vol/vol), at from room temperature to 60C for approximately 30-90 minutes, (4) rinsing said die with deionized water for approximately 5-20 minutes, (5) exposing said die and mold to concentrated, semiconductor

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grade hydrogen peroxide for approximately 5-20 minutes,
(6) rinsing said die with deionized water for
approximately 5-20 minutes, and (7) drying said released
microswitch with N₂ gas.

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12. The process of claim 1 wherein said fluid for
preparing said microswitch comprises materials selected
from the group consisting of oxygen, carbon
tetrafluoride, sulfur hexafluoride or other fluorine-
10 containing gases, argon and mixtures thereof.

13. The process of claim 12 wherein said material is a
gaseous plasma.

15 14. The process of claim 13 wherein said plasma is
Inductively Coupled Plasma.

20 15. A process for preparing the contacts on
microswitches having Ru contacts, comprising exposing
said contacts from said microswitches to an oxygen
plasma.